

IN THE CLAIMS

✓ Please cancel claims 1, 2, 5, 7, 17, 18, 21 and 23 without prejudice.

Please amend claims 3, 4, 6, 8, 9, 11, 12, 15, 19, 20, 22, 24, 25, 27, 28 and 31 as follows.

3. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system, comprising the steps of:

indicating wheel positions on the vehicle with targets;

imaging the targets to obtain locations of the wheel positions;

calculating a front wheel track, the front wheel track being defined between the locations of the two front wheels;

calculating a rear wheel track, the rear wheel track being defined between the locations of the two rear wheels; and

comparing an angle between the calculated front wheel track and the calculated rear track to a specified range for the angle between the calculated front wheel track and the calculated rear track.

4. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system, comprising the steps of:

indicating wheel positions on the vehicle with targets;

imaging the targets to obtain locations of the wheel positions;

calculating a front wheel track, the front wheel track being defined between the locations of the two front wheels;

calculating a rear wheel track, the rear wheel track being defined between the locations of the two rear wheels; and

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comparing the calculated front wheel track to a specified range for the front wheel track and comparing the calculated rear wheel track to a specified range for the rear wheel track.

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6. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system comprising the steps of:

indicating wheel positions on the vehicle with targets;

imaging the targets to obtain locations of the wheel positions;

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calculating a front wheel track, the front wheel track being defined between the locations of the two front wheels;

calculating a rear wheel track, the rear wheel track being defined between the locations of the two rear wheels;

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calculating a right wheel base, the right wheel base being defined as the distance of a line passing adjacent a first right wheel and perpendicularly from the wheel track passing through the first right wheel to the wheel track passing through a second right wheel;

calculating a left wheel base, the left wheel base being defined as the distance of a line passing adjacent a first left wheel and perpendicularly from the wheel track passing through the first left wheel to the wheel track passing through a second left wheel; and

comparing the calculated right wheel base to a specified range for the right wheel base and comparing the calculated left wheel base to a specified range for the left wheel base.

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8. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system, comprising the steps of:

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indicating wheel positions on the vehicle with targets;
imaging the targets to obtain locations of the wheel positions;
calculating a right wheel base, the right wheel base being defined between the locations of the two right wheels;
calculating a left wheel base, the left wheel base being defined between the locations of the two left wheels; and
comparing the calculated right wheel base to a specified range for the right wheel base and comparing the calculated left wheel base to a specified range for the left wheel base.

Sub C1 → 9. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system, comprising the steps of:

indicating wheel positions on the vehicle with targets;
imaging the targets to obtain locations of the wheel positions;
calculating a front wheel track, the front wheel track being defined between the locations of the two front wheels;
calculating a rear wheel track, the rear wheel track being defined between the locations of the two rear wheels;
calculating a front center point of the front wheel track;
calculating a rear center point of the rear wheel track;
defining a line originating from the center point of one of the front and rear wheel tracks and perpendicular thereto and intersecting the other of the front and rear wheel tracks; and

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Amended

calculating an offset distance from the intersection of the line with the other of the front and rear wheel tracks to the center point of the other of the front and rear wheel tracks.

11. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system, comprising the steps of:

indicating wheel positions on the vehicle with targets;

imaging the targets to obtain locations of the wheel positions;

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calculating a first diagonal, the first diagonal being defined between the locations of the right, front wheel and the left, rear wheel; and

calculating a second diagonal, the second diagonal being defined between the locations of left, front wheel and the right, rear wheel.

12. (Once Amended) The method according to claim 11, wherein the step of calculating the relationship between the front and rear wheels includes calculating a difference between the first diagonal and the second diagonal and comparing the calculated difference between the first diagonal and the second diagonal to a specified range for the difference between the first diagonal and the second diagonal.

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15. (Once Amended) The method according to claim 14, wherein the step of calculating the relationship between the front and rear wheels includes calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a

specified range for the difference between the first skew angle and the second skew angle.

19. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

wherein the vision imaging system calculates a front wheel track and a rear wheel track with the front wheel track being defined between the locations of the two front wheels and the rear wheel track being defined between the locations of the two rear wheels; and

wherein the calculation of the relationship between the front and rear wheels includes comparing an angle between the calculated front wheel track and the calculated rear track to a specified range for the angle between the calculated front wheel track and the calculated rear track.

20. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

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wherein the vision imaging system calculates a front wheel track and a rear wheel track with the front wheel track being defined between the locations of the two front wheels and the rear wheel track being defined between the locations of the two rear wheels; and

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wherein the calculation of the relationship between the front and rear wheels includes comparing the calculated front wheel track to a specified range for the front wheel track and comparing the calculated rear wheel track to a specified range for the rear wheel track.

22. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

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wherein the vision imaging system calculates a front wheel track and a rear wheel track with the front wheel track being defined between the locations of the two front wheels and the rear wheel track being defined between the locations of the two rear wheels;

wherein the vision imaging system calculates a right wheel base and a left wheel base with the right wheel base being defined as the distance of a line passing adjacent a first of the right wheels and perpendicularly from the wheel track passing through the first right wheel to the wheel track passing through a second of the right wheels and the left wheel base being defined as the distance of a line passing adjacent a first of the left

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wheels and perpendicularly from the wheel track passing through the first left wheel to the wheel track passing through a second of the left wheels; and

wherein the calculation of the relationship between the front and rear wheels includes comparing the calculated right wheel base to a specified range for the right wheel base and comparing the calculated left wheel base to a specified range for the left wheel base.

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24. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

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wherein the vision imaging system calculates a right wheel base and a left wheel base with the right wheel base being defined between the locations of the two right wheels and the left wheel base being defined between the locations of the two left wheels; and

wherein the calculation of the relationship between the front and rear wheels includes comparing the calculated right wheel base to a specified range for the right wheel base and comparing the calculated left wheel base to a specified range for the left wheel base.

25. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

wherein the vision imaging system calculates a front wheel track and a rear wheel track with the front wheel track being defined between the locations of the two front wheels and the rear wheel track being defined between the locations of the two rear wheels; and

wherein the vision imaging system:

calculates a front center point of the front wheel track and a rear center point of the rear wheel track;

defines a line originating from the center point of one of the front and rear wheel tracks and perpendicular thereto and intersecting the other of the front and rear wheel tracks; and

calculates an offset distance from the intersection of the line with the other of the front and rear wheel tracks to the center point of the other of the front and rear wheel tracks.

27. (Once Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle; and

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wherein the vision imaging system calculates a first diagonal and a second diagonal with the first diagonal being defined between the locations of the right, front wheel and the left, rear wheel and the second diagonal being defined between the locations of left, front wheel and the right, rear wheel.

28. (Once Amended) The system according to claim 27, wherein the calculation of the relationship between the front and rear wheels includes calculating a difference between the first diagonal and the second diagonal and comparing the calculated difference between the first diagonal and the second diagonal to a specified range for the difference between the first diagonal and the second diagonal.

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31. (Once Amended) The system according to claim 30, wherein the calculation of the relationship between the front and rear wheels includes calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a specified range for the difference between the first skew angle and the second skew angle.